CLAIMS:

1. A method of processing images belonging to a sequence of at least two images having a surface representing an organ or part of an organ which is deformable over time and called the organ surface, said surface including characteristic points, denoted marking points, which correspond from one image to another in the sequence, said method comprising steps of:

- defining a structure per unit length on one of the images of the sequence,
- calculating the positions of the marking points on at least two images, successive or not,
- determining the parameters of an explicit mathematical expression of the deformation of the organ or part of the organ observed between the two images, from the positions of a set of marking points on the two images and the positions of the points of the structure per unit length,
- applying said explicit mathematical expression to the structure per unit length in order to define the form of the structure per unit length after deformation of the organ between the two images.

2. An image processing method as claimed in claim 1, characterized in that said organ is marked by magnetic resonance spatial modulation, said marking being visible on the images in the form of marking lines, said marking lines deforming according to the deformation of the organ and being such that there exist points of intersection between said marking lines, said points of intersection being the marking points.

3. An image processing method as claimed in one of claims 1 or 2, characterized in that the structure per unit length defines a segmentation of the image, said segmentation thus being followed from one image to the other.

4. An image processing method as claimed in one of claims 1 to 3, characterized in that the mathematical expression of the deformation of the organ or part of the organ observed between the two images is determined for a surface including the structure per unit length

from positions on the two images of a set of marking points, said set of marking points containing at least the marking points present on said surface.

5. An image processing method as claimed in one of claims 1 to 3, characterized in that the mathematical expression of the deformation of the organ or part of the organ observed between the two images is determined solely for the points on the structure per unit length from positions on the two images of a set of marking points, said marking points being weighted according to their distance with respect to the structure per unit length.

6. An image processing method as claimed in one of claims 1 to 5, including a step of determining one or more global movements of the structure per unit length, said global movements being extracted from the mathematical expression of the deformation and a step of subtraction of these global movements from the mathematical expression of the deformation applied to the structure per unit length.

7. Image processing device, having means for receiving or generating images, said images belonging to a sequence of at least two images having a surface representing an organ or part of an organ deformable over time and called the organ surface, said surface including characteristic points, denoted marking points, which correspond to each other from one image to another in the sequence, said device comprising means of:

- defining a structure per unit length on one of the images of the sequence,
- calculating the positions of the marking points on at least two images, successive or not,
- determining the parameters of an explicit mathematical expression of the deformation of the organ or part of the organ observed between the two images, from the positions of a set of marking points on the two images and the positions of the points of the structure per unit length,
- applying said explicit mathematical expression to the structure per unit length in order to define the form of the structure per unit length after deformation of the organ between the two images.

8. Image processing device as claimed in claim 7, characterized in that said organ is marked by magnetic resonance spatial modulation, said marking being visible on the images in the form of marking lines, said marking lines deforming whilst following the deformation

of the organ and being such that there exist points of intersection between said marking lines, said points of intersection being the marking points.

9. Image processing device as claimed in one of claims 7 and 8, for implementing a method as claimed in one of Claims 3 to 6.

10. Image processing device as claimed in one of claims 7 to 9, comprising means for iterating the method described for two images, successive or not, in Claim 1, on all the successive images in the image sequence.

11. Image processing device as claimed in one of claims 7 to 10, comprising a step of determining one or more global movements of the structure per unit length, said global movements being extracted from the mathematical expression of the deformation and a step of subtracting these global movements from the mathematical expression of the deformation applied to the structure per unit length.

12. Image processing device as claimed in one of claims 7 to 11, comprising means of displaying the changes in the parameters of the deformation undergone by the structure per unit length during the sequence.

13. Image processing device as claimed in one of claims 7 to 12, characterized in that said structure per unit length is a structure per unit length defined by the user on one of the images in the sequence and in that the deformation is followed on all the images in the sequence.

14. Magnetic resonance image capture apparatus comprising:

- means of acquiring magnetic resonance images for obtaining a sequence of images,
- means for the visual presentation of these images, and
- image processing equipment as claimed in one of Claims 7 to 13.

15. Computer program product comprising portions/means/instructions of program code for processing steps of the method according to claims 1 to 5 when the program is executed on a computer.